

## **Epidemiologic Characteristics of Cases for Influenza A(H7N9) Virus Infections in China**

TO THE EDITOR—China's National Health and Family Planning Commission announced 3 deaths caused by avian-origin influenza A(H7N9) virus in March, which was the first time that the H7N9 strain has been found in humans [1]. This is of major public health significance and raises urgent questions and global concerns [2, 3].

To explore epidemic characteristics of human infections with H7N9 virus, data on individual cases from 19 February 2013 (onset date of first case) to 14 April 2013 were collected from the China Information System for Disease Control and Prevention, which included information about sex; age; occupation; residential address; and day of symptom onset, diagnosis, and outcome for each case. The definition of an unconfirmed probable H7N9 case is a patient with epidemiologic evidence of contact with poultry or wild bird(s) and clinical manifestations of fever, cough, and shortness of breath, or severe pneumonia excluding infection with seasonal influenza virus (H1N1, H5N1, and severe acute respiratory syndrome coronavirus). The confirmed cases also met at least 1 of the laboratory criteria for confirmatory diagnosis: (1) positive for H7N9 virus by real-time reverse transcription polymerase chain reaction; (2) isolation virus from

respiratory sample; or (3) a  $\geq 4$ -fold rise in antibody titers against H7N9 virus.

A total of 59 confirmed cases (71.2% male vs 28.8% female) and 13 deaths (69.2% male vs 30.8% female) occurred in mainland China during 19 February to 14 April 2013. Age of cases ranged from 4 years to 87 years (median, 59 years). Occupation of cases mainly included retired persons (52.5%), farmers (11.9%), chefs and slaughterers who were directly exposed to poultry (10.2%), and housing workers (8.5%). The median number of days between illness onset to diagnosis was 10 days (range, 1–40 days) and most patients (86.4%) were confirmed within 2 weeks of illness onset. The human cases were distributed sporadically over 40 counties in eastern China, including Shanghai Municipality (40.7%), Jiangsu Province (27.1%), Zhejiang Province (23.7%), Anhui Province (3.4%), Henan Province (3.4%), and Beijing Municipality (1.7%).

Analysis of mortality data has shown that the median age of death was 60 years (range, 27–87 years) and those aged >60 years made up most (8/13) of the deaths, possibly due to lower immunity in this age group and the presence of comorbidities with chronic diseases. The median number of days between illness onset to death was 12 days (range, 4–25 days). Nationwide, the 13 deaths were sporadically distributed over 12 counties of Shanghai Municipality (n = 8), Jiangsu Province (n = 3), Zhejiang Province (n = 1), and Anhui Province (n = 1). The initial diagnoses for all confirmed H7N9 cases were (1) pneumonia of unknown cause (n = 12), (2) other infectious disease (n = 12), and (3) unconfirmed probable H7N9 cases (n = 35). Mortality of cases with a diagnosis of pneumonia of unknown cause or other infectious disease was higher than that of unconfirmed probable cases of H7N9 (6/12 or 5/12 vs 2/35, respectively;  $P < .01$ , Fisher exact test).

This study describes the characteristics of H7N9 cases throughout China in the

early period of H7N9 epidemics, which will be useful for the prevention and therapeutic methods of H7N9 cases for health authorities in China. This study showed that accurate diagnosis will reduce the mortality of H7N9 cases. People, especially the elderly, living in an endemic area of H7N9 should take necessary measures to avoid contact with poultry and wild birds.

## Notes

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Wenyi Zhang,<sup>1,a</sup> Liya Wang,<sup>1,a</sup> Wenbiao Hu,<sup>2,a</sup>  
Fan Ding,<sup>3,a</sup> Hailong Sun,<sup>1</sup> Shenlong Li,<sup>1</sup>  
Liuyu Huang,<sup>1</sup> and Chengyi Li<sup>1</sup>

<sup>1</sup>Institute of Disease Control and Prevention, Academy of Military Medical Sciences, Beijing, China; <sup>2</sup>School of Population Health, Infectious Disease Epidemiology Unit, University of Queensland, Brisbane, Australia; and <sup>3</sup>Chinese Center for Disease Control and Prevention, Beijing, China

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<sup>a</sup>W. Z., L. W., W. H., and F. D. contributed equally to this work. Correspondence: Chengyi Li, Institute of Disease Control and Prevention, 20 Dong-Da Street, Fengtai District, Beijing 100071, People's Republic of China (licy\_60@163.com).

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